



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII, MONTANA OFFICE
FEDERAL BUILDING, 301 S. PARK, DRAWER 10096
HELENA, MONTANA 59626-0096

Chuck Figur

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INSPECTION REPORT

FACILITY: ASARCO East Helena Plant
P.O. Box 1230, E. Helena, MT 59635
EPA ID # MTD 006 230 346
Telephone (406) 227-7191

RESPONSIBLE OFFICIAL: Jon Nickel, Environmental Supervisor

INSPECTION PARTICIPANTS: Susan Zazzali, EPA; Perri Phillips,
MDEQ; Wes Ganter and Ed Moriarty, SAIC

DATE OF INSPECTION: May 6 & 7, 1997. The day was mostly
cloudy and windy with the temperature in
the low fifties.

PURPOSE OF INSPECTION: To assess compliance with the Resource
Conservation and Recovery act (RCRA) and sample secondary
materials processed by Asarco. Materials sampled were spent
metal bearing brick, lead/copper mattes from Glover and Encycle,
steel wool cartridges, crucibles, Hayden filter sand and numerous
points in the facility water circuit. The solid samples will be
analyzed for total metals (including precious metals), TCLP
metals and total silica. The water samples will be analyzed for
TCLP metals.

FACILITY DESCRIPTION: Asarco is a custom smelter occupying
approximately 80 acres in East Helena, Montana. The smelter has
been in operation since the late 1800s. The smelter produces
primary lead bullion and copper matte and speiss which are
further refined at other Asarco facilities. Source materials for
the smelter include virgin ores (60-70% from South America) as
well as non-virgin (secondary) metal-bearing materials. The
facility also operates an acid plant which produces 93% food
grade sulfuric acid.

RESULTS OF INSPECTION: The inspection team arrived at the
Asarco facility at approximately 9:10 AM on Tuesday May 6, 1997
and asked to meet with Mr. Jon Nickel. This was an unannounced
inspection. While we were waiting for Mr. Nickel we observed a
memorandum posted on the glass encased bulletin board. The
memorandum was about a meeting between Mr. Bob Novotny and the
Union. The memorandum discussed a problem with employees calling
EPA and OSHA, compliance investigations being conducted by EPA,
and stated that the EPA Region VIII was trying to put Asarco out
of the lead business. The memorandum was dated May 22, 1996.

Mr. Nickel arrived and we discussed the purpose of our visit. Our expressed purpose was to observe material management and sample non-virgin materials processed by Asarco.

Mr. Nickel stated that since EPA and Asarco were involved in national negotiations, he wanted to know if the Department of Justice and the EPA Regional Office knew about the inspection. I informed him that Mike Goodstein, Chuck Figur and Suzanne Bohan were aware of the inspection. He stated he would like to confirm this and stated he would make some phone calls. The inspection team waited in Mr. John Shaw's office for approximately half an hour.

When Mr. Nickel returned he asked what information we were looking for. I detailed that we were looking for an index of all the materials on site that day, and assays for each material, and information about how each material was generated. Mr. Nickel asked if he could have a copy of the inspection outline which detailed the information we were looking for. I gave Mr. Nickel a copy of our inspection outline. I stated that we would like supporting records for most of the information we would be discussing. Mr. Nickel stated that it would be difficult for him to provide us with records in one or two days, or even a week. I told him that he could give us the records that are easily accessible during the inspection and provide us with the remainder within two weeks. Mr. Nickel asked about the shipments from Mullen, Idaho mentioned on the outline. I told him that EPA had received a report of trucks placarded with hazardous waste signs that reportedly contained unmanifested hazardous waste. I told him we could discuss this in more detail as the inspection proceeded.

Mr. Nickel informed us that he would not be available to accompany us tomorrow if the inspection took two days. I stated that one of his staff would be adequate to accompany the inspection team. Mr. Nickel stated that he would have to accompany us. I asked Mr. Nickel if he was denying us access. He did not respond. I stated that we would only need one of his staff to accompany us while we sample, that we could be sure to ask Mr. Nickel all of our questions today. He stated that he would see how today went and then we could determine what should be done tomorrow.

Mr. Nickel escorted the sampling team to the conference room in the Environmental Office Building, where we met Debbie Horn. Ms. Horn was familiar with all the materials on-site for smelting and the ore management records.

Mr. Nickel provided the inspection team with an index of all the virgin ore and non-virgin materials on site on this date. The index is called the Inventory Check List. The Inventory Check List is updated on the last day of every month. Additions since the end of April to the list were hand written on to the copy of the list provided to us. Mr. Nickel also provided us

with two maps of the facility: one of the ore storage yard and OSHB; and the other of the new direct smelting building. These maps depicted the locations of each of the materials on the Inventory Check List.

Prior to discussing the list we briefly discussed the shipments of material from Mullen, Idaho. Mr. Nickel stated that he believed that the "Lucky Friday" concentrate may be the Mullen soils. He said he would get more information for us.

I asked Mr. Nickel which precious metals Asarco was recovering at this smelter. Mr. Nickel stated that they were recovering gold and silver. I asked Mr. Nickel if they were only recovering gold and silver. Mr. Nickel stated, "for the most part." I could not get a clear answer regarding whether Mr. Nickel believed other RCRA precious metals might be recovered at the smelter.

I asked Ms. Horn to go down the list and identify which materials were virgin ores or concentrates and to tell me the general chemical composition of each. Ms. Horn identified the following materials as virgin ore or concentrate:

File #	Mine	Chemical Composition Or Metal of Interest
0139	Trafigura Ag	Silver Concentrate
0141	Trafigura Ag	Silver Concentrate
0142	Trafigura Ag	Silver Concentrate
0143	Trafigura Ag	Silver Concentrate
0147	Eskay Creek	Gold
0152	Bolivian Barex	Ag Conc. Low lead
0153	Bolivian Barex	Ag Conc. Low lead
0154	Bolivian Barex	Ag Conc. Low lead
0155	Bolivian Barex	Ag Conc. Low lead
0156	Barex/Mintrad	Ag Conc. Low lead
0185	Bolivian Barex	Ag Concentrate
0186	Bolivian Barex	Ag Concentrate
0202	Bolivian Barex	Ag Concentrate
0218	Barex Lot 478	Silver Concentrate
0235	Bolivian Barex	Silver Concentrate
0250	Eskay Creek	Gold
0453	Fairfield Low Grade	Precious Metals
0454	Fairfield High Grade	Precious Metals
0505	Eskay Creek	Gold
0600	Mexican/Peru	Silver
0601	RGT Arsenio	Arseno Pyrite
0602	McCoy Cove	Lead
0603	Uchucchacua	Silver
0605	Julcani	Silver and Gold
0606	Leadville Pb	Lead
0607	Orcopamba	Silver and Gold
0609	Carolina	Silver
0610	Nor. Peru	Cu, Ag, Au, and Pb

0611	Sunshine Silver	Silver
0615	Bolivian 142	Silver and Gold
0617	RGT Arseno	Arseno Pyrite, Gold
0618	Carolina	Silver
0619	Lucky Friday	Lead and Silver
0681	Yauli - 23	Copper and Gold
0686	MT Tunnels	Lead and Gold
0693	Sunshine Ag	Silver
0726	Sogem 04	Lead and Silver
0733	Carolina	Lead and Silver
0734	Quir Pb	Lead
0745	Lucky Friday	Lead and Silver
0759	Nor. Peru	Copper
0760	Carolina	Silver
0768	Julcani	Silver and Gold

The Inventory Check Lists for March and April are attached. Question marks on the list denote that some material has been smelted, but Asarco has not determined the weight of the remaining amount in each pile.

Mr. Nickel agreed to provide the average assays for every material on the list. Ms. Horn stated that suppliers of virgin ores provide assays and Asarco does an assay on every material they receive. I asked how assay disputes were resolved. Ms. Horn stated that there is a mechanism for resolving the assays in each contract. Sometimes a third party conducts a settlement assay. Ms. Horn stated that typically they use the average of the two assays. Mr. Nickel agreed to provide a copy of Asarco's assay procedures and Asarco's Standard Operating Procedures for obtaining samples of each material.

Mr. Nickel asked me to provide more detail about the Idaho shipments we believed might be hazardous waste. I informed Mr. Nickel that in February a State Trooper had pulled over a trucker for speeding. The EPA had been informed that the truck was bearing a hazardous waste placard and that the driver stated that he was carrying soils that were a hazardous waste. Mr. Nickel stated again that he believed that the shipments were from the Lucky Friday mine in Idaho. Ms. Horn stated that East Helena typically receives between 1,900 and 2,000 tons per month of lead concentrate from Lucky Friday. I asked Mr. Nickel to provide me with documentation of shipments during February 1997. He agreed to do that.

At my request, Mr. Nickel agreed to provide a list of all the materials on the list that Asarco is paid to process within two weeks of the inspection.

Next I asked Ms. Horn to identify each non-virgin material on the list. I also asked her to describe the chemical composition. Asarco had previously provided information about how some of the materials are generated. I asked about generation only for materials I was unfamiliar with.

File #	Source	Metal	Generation
0111	SIPI	Gold	Sweeps
0116	Colt Router D	Gold	Router Dust
0118	Just Carbon	Gold	Carbon Fines/loaded
0121	SIPI	Gold	Router Dust
0122	SIPI	Gold	Router Dust
0135	Just Carbon	Gold	Carbon Fines
0145	Envirochem	Au, Ag	Steel Wool Cartridge
0146	Envirochem	Au, Ag	Steel Wool Cartridge
0158	Homestake Slag	Au, Ag	PM Bearing Slag
0159	Grouse Creek	Au, Ag, Pb	Crucibles, Cupels, Slag
0173	Osram Sylvania	Silver	High Grade Sweeps
0176	Colt Router D	Gold	Router Dust
0177	Colt Router D	Gold	Router Dust
0181	ECS Sweeps	Ag, Au	Silver Gold Sweeps
0184	Academy Slag	Ag, Au	PM Bearing Slag
0187	Precious Metal	Ag, Au	PM Refinery Slag
0190	ECS Router	Ag, Au	PM Router Dust
0191	Academy Slag	Ag, Au	PM Refinery Slag
0192	Pyro Pure Slag	Ag, Au	PM Refinery Slag
0194	SIPI L/G Sweeps	Ag, Au	Low grade sweeps
0195	SIPI	Gold	Sweeps
0196	SIPI	Gold	Sweeps
0198	ECS CRT Glass	Silica	CRT Glass
0200	Just Carbon	Gold	Partially or fully loaded?
0201	Just Carbon	Gold	Partially or fully loaded?
0203	Cascade Slag	Ag, Au	PM Refinery Slag
0204	Encycle Glass	Silica	CRT Glass
0206	Env Chem Cart	Gold	Steel Wool Cartridges
0207	Env Chem Rout	Gold	Router Dust
0208	Prec Metals	Gold	PM Refinery Slag
0209	Just Carbon	Gold	Partially or fully loaded?
0210	Just Carbon	Gold	Partially or fully loaded?
0211	ECS Router Ds	Gold	PM Router Dust
0213	Encycle Pb/Cu	Cu, Pb	Leached Glover Matte
0215	SIPI	Gold	Sweeps
0216	SIPI	Gold	Sweeps
0217	X-Cell Optical	Silica	CRT Glass
0220	ECS Router Ds	Gold	PM Router Dust
0221	SIPI Lot 652	Gold	PM Router Dust
0224	Gemark Slag	Gold	PM Refinery Slag
0225	Colt Router	Gold	PM Router Dust
0226	Colt Router	Gold	PM Router Dust
0228	ECS CRT Glass	Silica	CRT Glass
0229	ECS Slag	Gold	PM Refinery Slag
0230	ECS Sweeps	Ag, Au	PM Sweeps
0232	ECS Router Ds	Gold	PM Router Dust
0233	Just Carbon	Gold	Partially or fully loaded?
0234	Just Carbon	Gold	Partially or fully loaded?
0237	SIPI	Gold	PM Sweeps
0238	SIPI	Gold	PM Sweeps
0239	Envirochem Film	Ag, Au	PM Film Ash
0240	Envirochem Stl	Gold	PM Steel Wool Cartridge

0241	Env Chem Rout	Gold	PM Router Dust
0242	Umpire&Control	Au,Ag	Crucibles and Slag
0243	Kennecot Rdg	Au,Ag	Cupels and Slag
0244	ECS Precip	Ag	Diatomaceous Earth
0245	ECS Precip	Ag	Diatomaceous Earth
0246	Rnd Mtn Carbo	Gold	Carbon Fines
0247	Rnd Mtn Carbo	Gold	Carbon Fines
0248	SIPI Router	Ag, Au	PM Router Dust
0251	Homestake Slag	Ag, Au	PM Refinery Slag
0252	Savage Dross	Lead	Lead Dross
0253	ECS Photo Precip	Ag, Au	Diatomaceous Earth
0254	ECS Sweeps	Ag, Au	PM Sweeps
0255	ECS Router Dust	Ag, Au	PM Router Dust
0256	CRE Powder	Ag, Au	PM Sweeps
0257	SIPI 773/2784	Gold	PM Sweeps
0258	CRE Powder	Ag, Au	PM Sweeps
0259	CRE Powder	Ag, Au	PM Sweeps
0260	CRE Powder	Ag, Au	PM Sweeps
0261	CRE Powder	Ag, Au	PM Sweeps
0262	CRE Powder	Ag, Au	PM Sweeps
0263	CRE Powder	Ag, Au	PM Sweeps
0264	CRE Powder	Ag, Au	PM Sweeps
0265	Missouri Cu	Copper	Glover Matte
0266	CRE Powder	Ag, Au	PM Sweeps
0267	CRE Powder	Ag, Au	PM Sweeps
0268	Encycle Glass	Silica	CRT Glass
0274	SIPI 904/2799	Ag, Au	PM Sweeps
0286	Golden Photon	Silica	Crushed Glass
0294	SIPI	Ag, Au	PM Router dust
0302	Savage Dross	Copper	Dross
0309	SIPI Sweeps	Au, Ag	PM Sweeps
0317	ECS Router Ds	Ag, Au	PM Router Dust
0320	Encycle Pb/Cu	Cu, Pb	Leached Glover Matte
0321	Sony Glass	Silica	CRT Glass
0326	Colt Router	Gold	PM router Dust
0327	Colt Router	Gold	PM Router Dust
0347	Omaha B BRCO		Omaha Cupola Brick
0349	SIPI Sweeps	Ag, Au	PM Sweeps
0390	Savage Dross	Copper	Dross
0407	SIPI L/G Sweeps	Ag, Au	Low Grade PM Sweeps
0409	Omaha B BRCO		Omaha Cupola Brick
0410	Colt Router	Gold	PM Router Dust
0411	Sony Glass	Silica	CRT Glass
0426	Sony Glass	Silica	CRT Glass
0436	Amarill Mis		Unknown
0444	Industrial Re	Ag,Au,Cu	Shredded Circuit Boards
0450	ECS Router D	Ag, Au	PM Router Dust
0452	Sony CRT Glass	Silica	CRT Glass
0462	Prec Metals	Ag, Au	PM Slag
0475	SIPI 1935/320	Ag, Au	PM Sweeps
0487	Omaha B BRCO		Omaha Cupola Brick
0489	SIPI SW 1988/	Ag, Au	PM Sweeps
0499	ECS Router Ds	Gold	PM Router Dust
0500	ECS Router Ds	Gold	PM Router Dust

0501	ECS Router Ds	Gold	PM Router Dust
0502	SIPI Sweeps	Ag, Au	Low Grade PM Sweeps
0512	Precious Meta	Ag, Au	PM Slag
0604	Ep. Conv Contp	Copper	El Paso Contop Dust
0612	Sauget	Pb, Zn, Ag	Zinc residue
0613	El Paso Cnvct	Ag, Au, Cu	El Paso Cotrell Dust
0616	Omaha Skims	Ag, Au, Pb	Caustic Skims
0640	Omaha A Skim	Ag, Pb	Dezinced Skims
0669	Omaha S Skim	Ag, Pb	Dezinced Skims
0697	Encycle Pb/Cu	Pb, Cu	Leached Glover Matte
0718	Hayden Sand	Silica, Ag, Au	Filter Rock
0773	Amax		Zn Residue
0776	Amax		Zn Residue

PM denotes a precious metal bearing material. In some instances gold was designated as the metal reclaimed in the list above, but several other precious metals may be present in each material.

As we reviewed the list, discussion ensued about particular materials on the list. I directed my questions to Ms. Horn in the presence of Mr. Nickel. I asked Ms. Horn how the Savage Dross was generated. She did not know. Mr. Nickel agreed to provide information on the generation of Savage Dross in a letter within two weeks of the inspection.

Ms. Horn stated that she did not know the shipment dates for the Omaha Cupola Bricks. Mr. Nickel agreed to provide this information in a follow up letter within two weeks of the inspection date.

Ms. Horn could not tell me which carbon materials were partially or fully loaded. I did not ask Asarco to follow up with more information.

I asked Ms. Horn to describe how the steel wool cartridges were generated. Ms. Horn stated that the steel wool is loaded with gold and silver electrostatically.

I asked Ms. Horn to describe how the diatomaceous earth material is generated. Ms. Horn stated that photographic precipitates are adsorbed to the diatomaceous earth. The diatomaceous earth is approximately fifty percent silica, and the photographic precipitates contain silver.

I asked Ms. Horn to describe the difference between a high grade material and a low grade material. Ms. Horn stated that it depended on the contract and the type of material. She indicated that materials with 500 to 1,000 ounces per ton of silver were typically considered high grade.

I asked Ms. Horn to describe the differences between crucibles and cupels. Ms. Horn stated that a sample of lead ore and flux is placed into a crucible. The crucible is then fired

in an oven. A lead button, (also called dore), slag and prills (Ag and Au beads) are formed during the firing. The lead button is placed into a cupel and the cupel is fired. During the cupel firing, lead is absorbed by the cupel and a gold/silver bead is formed. Ms. Horn stated that crucibles are usually used many times, and cupels are only used once due to the absorption of lead.

I asked about the difference between copper bearing matte shipped directly to East Helena from Glover and the matte shipped from Glover through Encycle to East Helena. Ms. Horn stated that the Glover matte is usually sent to Encycle for treatment to remove the soda ash. The East Helena plant requested a direct shipment of Glover matte because they thought that the soda ash would help the reverberatory process. Subsequently, East Helena determined that there is too much soda ash in the untreated Glover matte and that they can only process a small amount at a time. The soda ash interferes with the processing. By diluting the untreated Glover matte they are able to process it.

I asked Ms. Horn if the shredded circuit boards in pile #444 were scrap (used) or off-specification circuit boards. Ms. Horn stated that she did not know how the circuit boards were generated.

I asked Ms. Horn how the Hayden Sand was generated. Ms. Horn stated that the Hayden sand is filter rock from the bottom of the fluidized bed at Asarco's Hayden Plant.

I asked if the numbers associated with the different types of material on the index correlated to the type of material or the particular location. Ms. Horn stated that the numbers change and there is no reason why certain numbers are assigned to certain materials. Mr. Nickel stated that everything on the maps should correlate with everything on the index. Mr. Nickel also stated that only in-house materials are not shown on the map or on the list (e.g. East Helena brick and speiss).

I informed Mr. Nickel that I was interested in the generation, storage and management of in-house residues. I told Mr. Nickel that I was aware that the State was working with Asarco to collect information about some East Helena residues and that I would coordinate with the State on this issue.

I asked Mr. Nickel to update me on their management plans for spent brick. Mr. Nickel stated that they were making arrangements to send all the Omaha brick off-site for disposal as a hazardous waste. Mr. Nickel stated that the East Helena brick I had observed during the July 1996 inspection had all been disposed of at the USPCI landfill in Utah.

Asarco plans to smelt Amarillo brick under the 40 CFR Part 266 Subpart F precious metal recycling exemption. I informed Mr. Nickel that EPA would expect to see residue testing of non-waste

derived residues and waste derived residues as required by 40 CFR Part 266.112. Mr. Nickel stated that he did not agree that the residue testing requirements applied. I informed Mr. Nickel that EPA had notified Asarco of the applicability of residue testing and I reminded him that the State of Montana had made the same determination in a letter responding to Asarco's Notification of Hazardous Waste Processing. Mr. Nickel stated that Asarco has not smelted any of the Amarillo brick they received since notifying the State.

I expressed surprise that the Omaha brick was still stored at East Helena. Mr. Nickel stated that during EPA's July inspection they had stated that they planned to ship the East Helena brick off-site and that they had not decided what to do with the Omaha brick. Asarco only recently determined that the Omaha brick would not meet the precious metals exemption and because of comments that "you folks have made," that it should be disposed of as a hazardous waste. I interpret this to mean EPA's position that brick is a spent material and not a characteristic by-product. If a spent material exhibits a characteristic EPA considers it a hazardous waste even when recycled.

I asked Mr. Nickel how they were managing their previously considered conditionally exempt small quantity generator waste (shop materials such as solvents and paints) now that Asarco was a large quantity generator. Mr. Nickel stated that they continued to manifest the waste to a RCRA hazardous waste landfill just as they had voluntarily done when they were conditionally exempt.

At this time, Mr. Nickel provided copies of the following documents:

1. USPCI's December 12, 1996 Waste Profiles for Flue Brick and Debris
2. Three Uniform Waste Management forms for shipments of brick to USPCI. Dates: 4/30/97, 4/30/97, and 11/4/96.

At approximately 12:00 PM we departed the facility for lunch.

At approximately 1:15 PM the sampling team reconvened with Mr. Nickel and Ms. Horn at the Environmental Offices to tour the facility. We started at the Ore Storage and Handling Building (OSHB). We observed a crusher at the north end of the OSHB. Prior to constructing the crusher in the OSHB, Asarco had crushed materials outside. The crusher was constructed from December 1996 to February 1997 under the Lead State Implementation Plan (Pb SIP). In the OSHB we observed the lead concentrate from the Lucky Strike mine from Mullan Idaho. In the OSHB we also observed a pile of the Sauget material.

From the OSHB the inspection team proceeded to the Ore

Storage Yard. In the yard we observed numerous piles of materials. (See attached index and map.)

The inspection team proceed to the Lower Lake sediment storage area. While we were in the yard high winds and a thunderstorm with hail began. The inspection team observed substantial fugitive emissions of windborn Lower Lake sediments from the pile. The team also observed runoff laden with sediments and several large breaches in the concrete highway barriers surrounding the Lower Lake sediment pile. Three of the breaches were greater than ten feet across. The Lower Lake sediment pile appeared to be releasing substantial quantities of sediment.

The inspection team waited for the storm to end on the leeward side of the blast furnace stacks. When the storm abated the team proceeded to the used oil storage area. Asarco has added several new tanks that are labeled "Used Oil." Three 30-gallon drums of used oil were not properly labeled. All used oil was stored within a secondary containment berm.

In the ore storage yard the inspection team observed a pile labeled "foul speiss." I asked Mr. Nickel to describe the material. Mr. Nickel explained that it was speiss generated at East Helena that had too much lead in it and it would be reprocessed. The foul speiss is inadvertently generated when there are processing problems.

The team proceeded to the direct smelting building. Mr. Nickel stated that Asarco was in the process of siding this building. The building appeared to be approximately 75% sided. Asarco plans to use this building for storage of hazardous wastes that are recycled under the precious metal recycling exemption. The inspection team observed the Amarillo brick in this building. The Amarillo brick was in a three sided bin with a concrete floor and concrete walls approximately fifteen feet high. The siding was complete in the area where the brick was stored.

Mr. Nickel agreed to meet with the inspection team at 7:00 AM the following day. The inspection team departed the facility at approximately 3:45 PM.

At approximately 7:15 AM on Wednesday, May 7, 1997, Mr. Nickel and Mr. John Cavanaugh met us at the main parking lot. I provided Mr. Nickel with a list of materials and facility water streams we planned to sample. The sampling lists are attached. Mr. Nickel and I proceeded to the Change House where we met with Kim Bradshaw and Adam Harbour to determine where we could obtain the laundry, shower, handwash and respirator wash water samples. All of these water streams discharge to Thornock Tank.

Mr. Nickel and Mr. Cavanaugh accompanied us to the sampling locations. Mr. Cavanaugh took split samples while Mr. Nickel

took notes and photographed the sampling. The sampling was done in accordance with the SOP (attached). Asarco requested that split samples of solid materials be placed in brown paper bags which they provided. The following samples were taken:

1. Respirator wash water. At approximately 8:00 AM the respirator wash water was sampled. The respirator wash is a series of four sinks. The first sink uses an electrostatic method and two soaps to remove debris. The remaining three sinks are rinse water. The sinks each contained approximately the same volume of water. Approximately four respirators had been washed prior to sampling the water. A composite sample was taken with an approximately equal volume of water taken from each sink.

2. Laundry Discharge Water. At approximately 8:09 AM the laundry discharge water was sampled at a pipe leading to a sump that the washing machines drain to. The sample was obtained as the rinse cycle was draining from the machine.

3. Thornock Tank Effluent. At approximately 8:15 AM the Thornock tank effluent was sampled at a pipe in the Thornock tank pumphouse. Eventually this sample was discarded and another sample of Thornock tank effluent was obtained. This is discussed in more detail below.

4. Pile #436 - Miscellaneous Amarillo Pile. At approximately 8:35 AM Pile #436 was sampled.

5. Sinter Plant Washdown. At approximately 8:45 AM the sinter plant washdown water was sampled at the north sinter plant sump. Mr. Nickel stated that the water in the sump is wash down water and fan cooling water. Mr. Nickel explained that the sinter plant was shut down every Wednesday and that today was a down day. Mr. Nickel stated that more material is flushed out on shut down days.

6. Pile #242 - Grouse Creek Crucibles, Cupels and Slag. At approximately 9:00 AM a sample was obtained from the 55-gallon drums at Pile #242. A composite sample was taken with subsamples from drum #5 of 24 and drum #19 of 24. The drums were labeled with U.N. codes for DOT specifications: UNIA2/YI.2-100 USA-M4709-RL 4/96.

7. Pile #240 - Envirochem Steel Wool Cartridges. At approximately 9:15 AM pile #240 was sampled. This pile consisted of twelve drums, some with lids and some covered with cardboard. A composite sample was collected with subsamples from two drums. The drums were not labeled.

8. Pile #206 - Envirochem Steel Wool Cartridges. At approximately 9:25 AM pile #206 was sampled. This pile consisted of 14 unlabeled 55-gallon drums. Some drums were closed-topped with bung lids and some drums were over packed without lids on the outermost drum. The drums were stacked two drums high on

wooden pallets. The lower level of drums were not accessible. Only one drum from the top layer was sampled.

9. Pile #159 - Grouse Creek Crucibles, Cupels and Slags. At approximately 9:30 AM pile #159 was sampled. This pile consisted of 39 55-gallon bung lidded drums. The drums were labeled "Used crucibles and cupels, contains lead, Recyclable." The drums were also labeled with fill start and finish dates.

10. East Helena Brick. At approximately 9:45 AM East Helena Brick was sampled. There was no pile number. Standard practice for Asarco is not to use pile numbers for "in-house" materials. There were two distinct piles. A composite sample was obtained from each pile.

11. Pile #409 - Omaha Brick and Fines. At approximately 10:00 AM pile #409 was sampled. Pile #409 consisted of two distinct piles, one pile of Omaha brick fines and a pile of Omaha brick. Fines are fine grained pieces of brick. A composite sample was taken from each pile.

12. Pile #697 - Encycle Copper Matte. At approximately 10:15 AM pile #697 was sampled. This pile of Encycle copper matte resembled extremely fine-grained grey sand. We observed this material releasing as fugitive air emissions in the wind.

At this point in the inspection we asked to sample Pile #244 and Pile #245, both of which were diatomaceous earth. Mr. Nickel informed us that the contents of both of these piles had just been moved to the Ore Storage and Handling Building. The inspection team observed the Pile signs, but there was no material in the vicinity. I asked if we could sample them at the OSHB. Mr. Nickel stated that the materials had been mixed with other materials. I decided it would not be possible to obtain a representative sample.

13. Pile #718 - Hayden Sand. At approximately 10:30 AM pile #718 was sampled.

14. Pile #347 - Omaha Brick. At approximately 10:35 AM pile #347 was sampled.

From the Ore Storage yard we proceeded to the Acid Plant. I told Mr. Nickel that we wanted to obtain a sample of acid plant effluent prior to it reaching the HDS plant. Mr. Nickel explained that the acid plant was shut down, and that they would need to start up a pump to obtain the sample.

15. Acid Plant Effluent. At the pumphouse on the east side of the precipitation building we sampled the acid plant effluent at approximately 11:05 AM. The sample was obtained from a red hose connected to PVC pipe.

En route to Lower Lake we observed several piles of

materials stored along the blast furnace flue. Mr. Nickel stated that these bins were used to store direct smelt materials and usually contained in-house materials such as matte. The bins are uncovered.

16. Lower Lake. At approximately 11:15 AM a surface water sample was taken from Lower Lake.

17. Conductivity Blowdown. At approximately 11:35 AM the conductivity blowdown sample was collected. This sample was obtained from a pipe draining into the transfer sump. A pole was used to hold a bucket under the conductivity blowdown flow. The bucket was rinsed three times with the conductivity blowdown prior to obtaining a sample.

18. Condensate Blowdown. At approximately 11:45 AM the condensate blowdown sample was collected. This sample was obtained from a pipe draining into the transfer sump. A pole was used to hold the bucket under the condensate blowdown flow. The bucket was rinsed three times with the condensate blowdown prior to obtaining a sample.

At approximately 12 noon the inspection team departed the facility for lunch. We reconvened at approximately 2:00 PM. The following samples were taken:

19. Pile #265 - Encycle Lead/Copper Matte. At approximately 2:25 PM pile #265 was sampled. A duplicate sample was also obtained.

20. Pile #320 - Encycle Copper Matte. At approximately 2:35 PM pile #320 was sampled.

21. Pile #213 - Encycle Copper/Lead Matte. At approximately 2:40 PM pile #213 was sampled. A composite sample was also obtained. At this pile we observed blasting caps and blasting cord. The cord was white. The caps we saw were orange or green. The pile appeared to be a pile of caps and cord held together by dirt. I asked Mr. Nickel about the blasting caps and cord. Mr. Nickel expressed surprise. He did not recognize the materials.

22. Bin #2 in Direct Smelting Building - Amarillo Brick. At approximately 3:00 PM the Amarillo Brick was sampled.

The inspection team proceeded to the Change house to obtain a sample of the shower water. We arrived after the showers were complete. However, subsequently Asarco informed EPA that the shower water drains directly to Thornock Tank and would have been impossible to isolate. Since we had planned to take a duplicate sample at the showers, we were short a duplicate for quality control. We decided to discard the original sample of Thornock Tank and obtain a new sample with a duplicate.

23. Thornock Tank. At approximately 3:25 a sample and duplicate

were obtained from the pumphouse adjacent to Thornock Tank.

Mr. Nickel asked which analyses we would be running. Mr. Ganter informed him that we would run EPA Methods 1311 (TCLP-metals), 6010 (total metals), 7471 (mercury) and 7470 (for the water). We also will be running a fire assay for precious metal content. Mr. Nickel asked Mr. Ganter where the samples would be shipped. Mr. Ganter informed him that they would be analyzed by Columbia Analytical Services. I asked where Asarco planned to have there samples analyzed. Mr. Nickel stated that Asarco's Technical Services in Salt Lake City would do the analyses.

At approximately 3:40 PM we met in the main office conference room for an exit interview. I filled out a Notice of Inspection form and gave this to Mr. Nickel. A copy is attached.

Mr. Nickel provided me with a copy of the fire assay procedures.

Mr. Nickel asked me to tell him what I saw during the inspection that concerned me. I briefly discussed the following with Mr. Nickel.

I told Mr. Nickel that I was concerned with the manner that they were managing the East Helena brick. Asarco had recently generated new brick that is presently being stored outside. I told Mr. Nickel that East Helena brick should be managed as a hazardous waste as soon as it was generated. Mr. Nickel asked me to explain what I thought they could do with in-house brick if it was a hazardous waste. I explained that RCRA storage and generator requirements would apply as well as residue testing. Mr. Nickel asked if the residue testing could be limited if they only processed East Helena brick. I told Mr. Nickel that this was a possibility since some of the contaminants of concern in the brick are derived from ore, but that the Agency would be concerned about chromium since this is found in the brick at very high levels prior to exposure to ores.

Mr. Nickel asked about accepting off-site brick. I told Mr. Nickel that Asarco must look at metals that are not recovered at East Helena (Toxics along for the ride), that they must address residue testing, and they must comply with RCRA storage requirements. Mr. Nickel asked if this would have to obtain a RCRA Part B Storage Permit. I responded that it would require a RCRA storage permit.

Mr. Nickel asked if RCRA addressed fines differently. I responded that fines were not addressed differently under RCRA. I also mentioned that sorting coarse material from fine may be a type of treatment that may require a permit.

Mr. Nickel asked if the treatment of precious metal brick would also trigger residue testing. I explained to Mr. Nickel that 40 CFR Part 266.112 residue testing was required when

recycling precious metal bearing hazardous waste. Mr. Nickel expressed frustration with our response to Asarco's questions on the residue testing requirements. He asked me if I understood the Agency's response. I informed Mr. Nickel that I believed I understood the response and that I had participated in drafting the response. Mr. Nickel stated that he could not understand why we would require a 95% upper confidence limit, when that would mean they were guaranteed to fail the test at least 5% of the time. I explained to Mr. Nickel that the Agency believed that the use of multiple subsamples in compositing, adequate record keeping and segregation of residues could overcome this problem.

I told Mr. Nickel that I was alarmed to find blasting caps and blasting wire in the copper matte from Encycle. I told him I believed that this was a worker safety issue and that it appears Encycle is not accurately characterizing the material they ship to East Helena. Mr. Ganter mentioned that he had also observed some material that appeared to be fiberglass mixed in with the matte. Mr. Nickel agreed to find out where the blasting materials had come from and why they were mixed in with the matte.

I cautioned Mr. Nickel that Asarco needs to keep a tighter control on East Helena intermediates, such as fouled speiss and tank sludges, to prevent speculative accumulation. Mr. Nickel agreed that they need to pay more attention to this. He stated that he is planning to add the intermediates into their management program.

Attached is a list of information Mr. Nickel agreed to provide.

28 July 1997
Date of Inspection Report

Susan A. Zazzali
Susan A. Zazzali
EPA Inspector

cc: Charles Figur, 8ENF-L

Inventory Checklist for March 1997

Inventory Checklist for April 1997

Ore Storage Yard Map

INVENTORY CHECK LIST FOR MAR - 1997

03/30/1997 08:14 AM

PILE MINE	WT	PILE MINE	WT	PILE MINE	WT
0109 ENVIRO CHEM	7	0410 COLT ROUTER	19	0600?MEXICAN/PERUO	1111
0111 SIPI 66/3095	20	0411 SONY GLASS	297	0601 RGT. ARSENIO	1071
0115 GEMARK SWEEPS	3	EST 0418?SONY CRT GLAS	64	0602?MCCOY COVE	1504
0116 COLT ROUTER D	10	0425 BRANDEIS SWEE	15	0603 UCHUCCHACUA	2004
0117 JUST SLAG 83/	9	0426 SONY GLASS	109	0604 EP.CONV CONTP	1574
0118 JUST CARBON 8	13	0436 AMARILL MIS	71	0605 JULKANI	1383
0119 ECS SWEEPS	10	0444 INDUSTRIAL RE	40	0606 LEADVILL PB	860
0121 SIPI ROUTER	7	0446 ECS ROUTER DS	7	0607 ORCOPAMPA	1439
0122 SIPI ROUTER	8	0447 ECS ROUTER DS	7	0608 CAROLINA	1052
0125 SIPI L/G SWEE	20	0448 ECS ROUTER DS	7	0609 CAROLINA	1138
0126 FLAMBEAU CUPE	4	0450 ECS ROUTER D.	6	0610 NOR PERU	667
0134 MAYDAY CRUDE	14	0452 SONY CRT GLAS	292	0611 SUNSHINE SILV	60
0135 JUST CARBON	20	0453 FAIRFIELD L/G	299	0613 ELPASO CNVCT	45
0139 TRAFIGURA AG	95	0454 FAIRFIELD H/G	1040	0616?OMAHA SKIMS	945
0140 TRAFIGURA AG	96	0462 PREC. METALS	37	0640 OMAHA A SKIM	299
0141 TRAFIGURA AG	95	0475 SIPI 1935/320	21	0669 OMAHA S SKIM	544
0142 TRAFIGURA AG	95	0476 ENVIRO FILM	2	0681 YAULI - 23	1069
0143 TRAFIGURA AG	95	0478 ENVIRO ROUTER	6	0686?MT. TUNNELS	3308
0147 ESKAY CREEK	1161	0487 OMAHA B BRCO	60	0693?SUNSHINE AG	1226
0150 SAVAGE DROSS	66	0489 SIPI SW.1988/	19	0697?ENCYCLE PB/CU	1231
0151 SIPI L/G SWEE	21	0490 COLT ROUTER	7	0701 YAULI 50	434
0152 BOLIVIAN/BARE	18	0491 COLT ROUTER	7	0718 HAYDEN SAND	1365
0153 BOLIVIAN/BARE	19	0492 COLT ROUTER	6	0726 SOGEM 04	581
0154 BOLIVIAN/BARE	22	0494 BRAZ. SOGEM	75	0733 CAROLINA	829
0155 BOLIVIAN/BARE	22	0499 ECS ROUTER DS	6	0734 QUIR PB	959
0156?BAREX/MINTRAD	107	0500 ECS ROUTER DS	9	0745?LUCKY FRIDAY	3307
0158 HOMESTAKE SLA	16	0501 ECS ROUTER DS	7	0759 NOR PERU	1351
0159 GROUSE CREEK	10	0502 SIPI SWEEPS	20	0760 CAROLINA	2214
0160 ECS AG SWEEPS	4	0503 GEMARK SWEEPS	6	0761 RGT	584
0166 CRE AG FE POW	1	0505 ESKAY CREEK C	2449	0765 GREENS CREEK	1247
0167 CRE AG FE POW	1	0508 COLT ROUTER	20	0768 JULKANI	1123
0168 CRE AG FE POW	1	0510 ZORTMAN CARBO	5	0773 AMAX	3349
0169 CRE AG FE POW	1	0512 PRECIOUS META	30	0776 AMAX	1058
0170 CRE AG FE POW	1	0514 ECS SWEEPS	10		
0171 CRE AG FE POW	1	0515 ECS SWEEPS	11		
0173 OSRAM SYLVANI	10	0516 ECS SWEEPS	9		
0176 COLT R. DUST	13				
0177 COLT R. DUST	8	145 ENVIRO CHEM			
0181 ECS SWEEPS 34	7	146 ENVIRO CHEM			
0184 ACADEMY SLAG	23	187 PRECIOUS METALS			
0185 BOLIV BAREX	19	190 ECS Router DUST			
0186 BOLIV BAREX	19	195 SIPI Router DUST			
0189 SIPI L/G SWEE	20	196 SIPI Router DUST			
0191 ACADEMY SLAG	23	203 CASCADE SLAG			
0192 PYROPURE SLAG	23	204 ENCYCLE GLASS			
0194 SIPI L/G SWEE	4	205 ENCYCLE GLASS			
0198 ECS CRT GLASS	12	206 ENVIRO CHEM			
0199 HOMESTAKE CAR	16	207 ENVIRO CHEM			
0200 JUST CARBON	16	208 PRECIOUS METALS			
0201 JUST CARBON	16				
0202 BAREX/BOLIVIA	20				
0221 SIPI LOT 652	13				
0232 ECS ROUTER DS	22				
0248 SIPI ROUTER	10				
0257 SIPI 773/2784	13				
0265 MISSOUR CU	91				
0274 SIPI 904/2799	13				
0285 ECS ROUTER DS	8				
0286 GOLDEN PHOTON	17				
0294 SIPI	11				
0302 SAVAGE DROSS	52				
0309 SIPI SWEEPS	13				
0317 ECS ROUTER DS	6				
0318 ECS ROUTER DS	16				
0320 ENCYCLE PBYCU	429				
0321 SONY GLASS	134				
0325 COLT ROUTER	4				
0326 COLT ROUTER	12				
0327 COLT ROUTER	4				
0347 OMAHA B BRCO	145				
0349 SIPI SWEEPS	16				
0389 ECS ROUTER D.	12				
0390 SAVAGE DROSS	65				
EST 0393 SONY GLASS	89				
0399 ENVIROCHEM DS	9				
0407 SIPI L/G SWEE	16				
0409 OMAHA B BRCO	155				

WCT 1015

I asked for list from March

INVENTORY CHECK LIST FOR APR - 1997

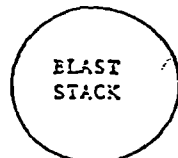
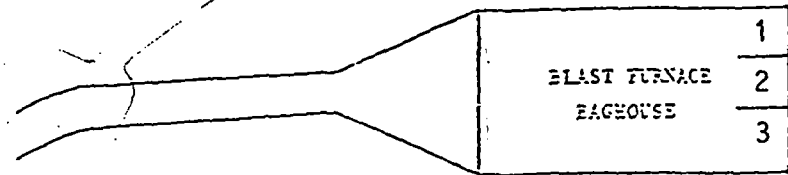
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PILE MINE	WT	PILE MINE	WT	PILE MINE	WT
0111 SIPI 66/3095	20	0258 CRE POWDER	1	0600?MEXICAN/PERUO	807
0116 COLT ROUTER D	10	0259 CRE POWDER	1	0601 RGT ARSENIO	846
0118 JUST CARBON 8	12	0260 CRE POWDER	1	0602 MCCOY COVE	1496
0121 SIPI ROUTER	7	0261 CRE POWDER	1	0603 UCHUCCHACUA	1225
0122 SIPI ROUTER	8	0262 CRE POWDER	1	0604 EP.CONV CONTP	1731
0135 JUST CARBON	20	0263 CRE POWDER	1	0605 JULCANI	1158
0139 TRAFIGURA AG	95	0264 CRE POWDER	1	0606 LEADVILLE PB	1238
0141 TRAFIGURA AG	95	0265 MISSOUR CU	91	0607 ORCOPAMPA	737
0142 TRAFIGURA AG	95	0266 CRE POWDER	1	0609 CAROLINA	1090
0143 TRAFIGURA AG	95	0267 CRE POWDER	1	0610 NOR PERU	567
0145 ENVIROCHEM	2	0268 ENCYCLE GLASS	189	0611 SUNSHINE SILV	487
0146 ENVIROCHEM	6	0274 SIPI 904/2799	13	0612 SAUGET	841
0147 ESKAY CREEK	1161	0286 GOLDEN PHOTON	17	0613 ELPASO CNVCT	45
0150 SAVAGE DROSS	66	0294 SIPI	11	0615 BOLIVIAN 42	1182
0151 SIPI L/G SWEE	21	0302 SAVAGE DROSS	52	0616?OMAHA SKIMS	844
0152 BOLIVIAN/BARE	18	0309 SIPI SWEEPS	13	0617 RGT ARSENIO	1148
0153 BOLIVIAN/BARE	19	0317 ECS ROUTER DS	6	0618 CAROLINA	1006
0154 BOLIVIAN/BARE	22	0320 ENCYCLE PBYCU	429	0619 LUCKY FRIDAY	75
0155 BOLIVIAN/BARE	22	0321 SONY GLASS	134	0640 OMAHA A SKIM	299
0156?BAREX/MINTRAD	107	0326 COLT ROUTER	12	0669 OMAHA S SKIM	544
0158 HOMESTAKE SLA	16	0327 COLT ROUTER	4	0681 YAULI - 23	1069
0159 GROUSE CREEK	10	0347 OMAHA B BRCO	145	0686?MT. TUNNELS	3975
0173 OSRAM SYLVANI	10	0349 SIPI SWEEPS	16	0693?SUNSHINE AG	1201
0176 COLT R. DUST	13	0390 SAVAGE DROSS	65	0697?ENCYCLE PB/CU	1734
0177 COLT R. DUST	8	0407 SIPI L/G SWEE	16	0718 HAYDEN SAND	1365
0181 ECS SWEEPS 34	7	0409 OMAHA B BRCO	155	0726 SOGEM 04	327
0184 ACADEMY SLAG	23	0410 COLT ROUTER	19	0733 CAROLINA	781
0185 BOLIV BAREX	19	0411 SONY GLASS	297	0734 QUIR PB	578
0186 BOLIV BAREX	19	0426 SONY GLASS	109	0745?LUCKY FRIDAY	3377
0187 PRECIOUS META	30	0436 AMARILL MIS	71	0759 NOR PERU	1351
0190 ECS ROUTER DS	21	0444 INDUSTRIAL RE	40	0760 CAROLINA	2064
0191 ACEDEMY SLAG	23	0450 ECS ROUTER D.	6	0768 JULCANI	327
0192 PYROPURE SLAG	23	0452 SONY CRT GLAS	292	0773 AMAX	3046
0194 SIPI L/G SWEE	4	0453 FAIRFIELD L/G	299	0776 AMAX	1058
0198 ECS CRT GLASS	12	0454 FAIRFIELD H/G	742		
0200 JUST CARBON	16	0462 PREC. METALS	37		
0201 JUST CARBON	16	0475 SIPI 1935/320	21		
0202 BAREX/BOLIVIA	19	0487 OMAHA B BRCO	60		
0203 CASCADE SLAG	25	0489 SIPI SW 1988/	19		
0204 ENCYCLE GLASS	402	0494 BRAZ. SOGEM	50		
0206 ENV CHEM CART	2	0499 ECS ROUTER DS	6		
0207 ENV CHEM ROUT	16	0500 ECS ROUTER DS	9		
0208 PREC METALS	30	0501 ECS ROUTER DS	7		
0209 JUST CARBON	21	0502 SIPI SWEEPS	20		
0210 JUST CARBON	21	0505 ESKAY CREEK C	757		
0211 ECS ROUTER DS	10	0512 PRECIOUS META	30		
0213?ENCYCLE PB/CU	492				
0217 X-CELL OPTICA	22				
0218 BAREX LOT 478	19				
0220 ECS ROUTER DS	10				
0221 SIPI LOT 652	13				
0224 GEMARK SLAG	22				
0225 COLT ROUTER	13				
0226 COLT ROUTER	7				
0228 ECS CRT GLASS	10				
0229 ECS SLAG	8				
0230 ECS SWEEPS	5				
0232 ECS ROUTER DS	22				
0235 BOLIVIAN/BARE	19				
0239 ENV CHEM FILM	3				
0240 ENV CHEM STL	2				
0241 ENV CHEM ROUT	5				
0242 UMPIRE&CONTRO	10				
0243 KENNECOT RIDG	12				
0244 ECS PRECIP	11				
0245 ECS PRECIP	8				
0246 RND MTN CARBO	21				
0247 RND MTN CARBO	22				
0248 SIPI ROUTER	10				
0250 ESKAY CREEK	35				
0251 HOMESTAKE SLA	10				
0252 SAVAGE DROSS	67				
0253 ECS PHOTO PRE	20				
0254 ECS SWEEPS	10				
0255 ECS ROUTER D.	10				
0256 POWDER	1				
0257	13				

195 SIPI
196 SIPI
215 SIPI
216 SIPI
233 JUST CARBON
234 JUST CARBON
237 SIPI
238 SIPI

Am/Si from CANADA

Ag concentrate



502 500 499 501	
Lower Lake Excavation	347
	487
	205

317	232	325	327	452
718	505	697		

454
491 492 490
135
510
191
147
201 318 321
411
426

LIMEROCK

CORE TRACK

New Bag Track 285

450 116 410 274 309
475 407 111 489
125 122 121 425
189
HONG KONG

HIGH GRADE		
145	168	203
146	169	
166	170	
167	171	

478 508 159 118 117 389 326 286 198 200
115 119 199
503 160 184
PIER TRACK
669 409 444 616
202 196 195
156 172 153 154 151

ROAD TO GATE

SCALE

ACID DE-COLORIZATION

320

265

NAME	S	C	N
HOPTO PADS			

HOPTO 1 HIGH

294
221

151 195 196 194

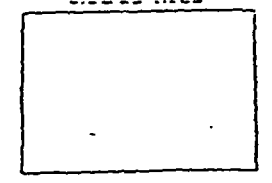
LEAD 1A
2 TRACK

436 134 454 505 158 418 512 462 418 453 505 204
208 393 187 393

PIERO CO

TRAIL

SAMPLE MILL



SE-A	57-A
SE-B	57-B
SE-C	57-C 640

HIGH LINE BINS

27	26	25	24	23	22	21	20	19	18	17	16	15	14	13
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

												302		. 390		150						
	T1	T2	T3	T4	T5	T6							Z	W/A	W/C	W/E	W/F	W/G	J	K		
16			745	602	686			776					773	768	603	605	613	608		761	693	
15																						
14																						
13										494				C/A		C/C		C/E	C/F	C/G		
		734			745	600			611	773	609		606		601		726		765	610	701	I
															E/A		E/C		E/E	E/F	E/G	
															607		681		760			
																						H
															B				D			

IN CARS

139
140
141
142
143

Direct Smelt Map.

TRK DR
#2

List of Proposed Soilds Samples

Solids Sampling

0159 Grouse Creek
206 Steel Wool Cartridges
213 Glover Matte via Encycle F.D.
240 Steel Wool Cartridge
242 Crucibles + Cupels
244 ECS diatomaceous Earth
245 ECS diatomaceous Earth
265 Missori Glover Copper Matte F.D.
320 Encycle - Glover Matte
347 Omaha Cupola Brick
19 Omaha Cupola Brick
136 Amarillo Slag / mixed with Brick
187 Omaha Cupola Brick
197 Encycle Glover Copper Matte
118 Hayden Sand

East Helena Brick
East Helena Brick
East Helena Brick
Amarillo Brick

} * No precious metals or Fire Assay

19 samples - for totals + Hg / TCLP + Hg / Fire Assay

Draft SAIC Sampling & Analysis Plan

OWEC SUPPORT CONTRACT

U.S. EPA Contract No. 68-C4-0072

**Work Assignment No. EC-2-4 (RE)
SAIC Project No. 01-0834-07-8299-090**

**DRAFT
SAMPLING AND ANALYSIS PLAN
FOR THE ASARCO - HELENA PLANT**

Approved by: _____ Date: _____
Bill Hahn, SAIC Work Assignment Manager

DRAFT
SAMPLING AND ANALYSIS PLAN
FOR SAMPLING AT THE ASARCO PLANT, HELENA, MONTANA

1. SAMPLING OBJECTIVES

ASARCO is a primary lead smelter occupying approximately 80 acres in East Helena, Montana. The smelter has been in operation since the late 1800s. The smelter produces primary lead bullion, copper matte, and speiss which are further refined at other ASARCO facilities. Source materials for the smelter include virgin ores (60-70% from South America) as well as non-virgin (secondary) metal-bearing materials. The facility also operates an acid plant which produces 93% food grade sulfuric acid.

SAIC will conduct a sampling visit at the ASARCO lead smelting plant located in Helena, Montana, in support of a possible enforcement action anticipated by the EPA. All sampling activities will be conducted on-site, and the objectives will be as follows:

- Collect approximately 20 solid and 10 liquid samples from on-site waste piles and process water waste streams
- Collect QC samples at a 10% frequency
- Collect a field blank every day
- Collect an equipment blank

Each solid sample collected on-site will be analyzed for the following parameters:

- Total metals, including mercury and silica
- Toxicity characteristic for metals, including mercury (TCLP, as described in 40 CFR Part 261 Appendix II)
- Precious metals by ICP/MS, including (Ag, Au, Pt, Pd, Ir, Os, Rh, Ru, Re)
- Precious metals by Fire Assay, including (Au, Pt, Pd, others TBD)

Each liquid sample collected on-site will be analyzed for the following parameters:

- Toxicity characteristic for metals, including mercury (TCLP, as described in 40 CFR Part 261 Appendix II)

2. SAMPLING PROCEDURES

Sampling procedures for solid and liquid sampling will be consistent with the sampling requirements as described in Appendix I to 40 CFR Part 261.

2.1 Solids Sampling Procedures

Each sample collected will be a composite of material from the top, middle, and bottom of the waste pile. Before sampling, four (4) to six (6) inches of surface material will be scraped away from the waste pile so that samples are not biased by moisture, debris, or airborne materials that may have collected on the pile surface over time. The sample collected from each location will be proportionately placed in two separate containers for total metals and TCLP analyses (see Table 1).

2.2 Liquid Sample Collection

Each sample will be a grab sample collected directly from the source into the sample container, unless the source is not readily accessible. In those cases, a plastic bucket with cotton rope will be used to collect the liquid sample(s). Samples will be collected from representative sites that demonstrate complete mixing of the wastestream.

2.2 Containerization

All samples will be containerized in I-Chem 300 Series (or equivalent) containers. The container requirements and analyses requested for this sampling visit are summarized in Table 1.

2.3 Sample Analysis

All samples will be analyzed following the methods prescribed in Table 1 and the methods described in SW-846 3rd. ed. If an approved version of a method more current than the one published in SW-846 3rd ed. is available, it may be used instead. Table 2 characterizes the field quality control samples that will be collected.

3. SCHEDULE

SAIC will meet the EPA representatives on May 5, 1997 at approximately 2:30 in the afternoon at their office to discuss details of sampling trip. The site visit is scheduled as follows:

- May 6, 1997 (8:00 - 3:00) Conduct a comprehensive walk-through and inspection of the entire site, determine exact sample locations, collect detailed notes, take photographs, and prepare a site map. Return to EPA offices.
- May 7, 1996 (8:00 - 4:00): Conduct sample collection activities and obtain any additional information. Once collected, samples will be packaged and delivered directly to the Federal Express office at the Helena Airport.

4. EQUIPMENT

Sampling equipment that will be used in the collection of samples from waste piles and liquid wastestreams are discussed below. A list of additional equipment and supplies that will be used is provided as Appendix A.

4.1 Equipment for Sampling Solids

Sampling equipment for sampling of the waste piles will be consistent with the sampling equipment requirements as described in Appendix I to 40 CFR Part 261. A plastic scoop will be used to collect, and place the material in the sample container. One scoop will be used per sample location. Sampling equipment will be decontaminated prior to any sample collection activities.

4.2 Equipment for Sampling Liquids

Sampling equipment for sampling liquids will be consistent with the sampling equipment requirements as described in Appendix I to 40 CFR Part 261. Only if required, a plastic bucket will be used to collect and place the material in the sample container. Sampling equipment will be decontaminated prior to any sample collection activities.

4.3 Decontamination of Sampling Equipment

The use of reusable sampling equipment is not anticipated as part of this sampling exercise, however, sampling conditions may mandate that a reusable bucket be used to collect liquid samples at one or more locations. If reusable sampling equipment is to be used, decontamination will be consistent with EPA Region VIII requirements, as summarized below:

- Prior to its initial use, the bucket will be cleaned with nonphosphate detergent and tap water
- Rinse with tap water
- Rinse with dilute (0.10 N) nitric acid
- Rinse with deionized water
- Air dry
- If used at the facility, the bucket will be thoroughly rinsed with deionized water
- Rinsed a minimum of five (5) times with the wastestream to be sampled

All disposable equipment will be containerized for disposal and disposed of at the facility (per their approval).

5. PERSONNEL

The SAIC sample team will consist of Ed Moriarty and Wes Ganter. The sample team leader will be Mr. Ed Moriarty (SAIC). In addition, representatives from the EPA, as well as state environmental agencies, may be on-site observing the sampling activities.

The sample team leader will be responsible for the collection of all samples and field measurements, supervision of all on-site personnel, sample handling and custody, maintaining the field logbook, and all other on-site activities. Following the scheduled field activities, the sample team leader will prepare and submit a trip report documenting all activities at the site during the sampling visit.

The sampling technician will be responsible for the setup of equipment and will assist the sample team leader with the collection of samples and field measurements, with sample handling and custody, and with other tasks as designated by the sample team leader. In addition, the sampling technician will assist with the preparation of the trip report.

Appendix A Equipment

Type of Equipment	Equipment	Quantity per Sampling Episode
Cleaning Supplies	Alconox	As necessary
	500-mL Spray bottles	1
	5-gallon Plastic bucket	1
	Scrub brushes	1
Sampling Equipment	Chemical preservative: HNO ₃	As necessary
	Measuring tape	1
	Sample aliquot containers	See Table 2
	Plastic scoops	25
	Aluminum foil	1 box (75 sq. yds.)
	Insulated coolers	5
	Bound field logbook	2
	Camera and Color Film	3 rolls of 24 exp.
Personal Protective Equipment	Tyvek coveralls	6
	Rain gear	2
	Hard hats	per person
	Nitrile outer gloves	10
	Vinyl inner gloves	Box of 100
	Chemical resistant safety goggles or splash shields	2
	Chemical-resistant steel-toed boots	per person
	First aid kit	1
	MSA Full-face Respirators	2
	Respirator cartridges (particulates and organic vapor)	1 Box
Shipping Equipment	Strapping and Clear wide tape	1
	Scissors and Pocket knife	2
	Indelible markers/pens	6
	Ziploc bags	As necessary
	Large trash bags (39-gallon capacity)	As necessary
	Custody seals	As necessary
	Chain-of-Custody forms	As necessary
	Sample labels	As necessary
	Shipping labels	As necessary

TABLE 1: SUMMARY OF ANALYTICAL PARAMETERS AND ASSOCIATED PRESERVATIVES, ANALYTICAL METHODS, AND HOLDING TIMES FOR SOLID AND LIQUID SAMPLES AND BLANKS

PARAMETER	ANALYTICAL METHOD	CONTAINER	PRESERVATION	HOLDING TIME (EXTRACTION, ANALYSIS)
Total Metals*	ICP Methods Soil: 3050/6010	Soil: 8-oz. jar	None	6 months, 6 months
Total Mercury*	CVAA Methods Water: 7470 Soil: 7471	Water: 1 × 1.0-L plastic Soil: 8-oz. jar	HNO ₃ , pH <2 None	28 days 28 days
TCLP Metals	Method 1311	Water: 1 × 1.0-L plastic Soil: 16-oz. jar	None None	14 days, 14 days 14 days, 14 days
Precious Metals	ICP Methods Soil: 3050/6010	Soil: 16-oz. jar	None	6 months
Precious Metals	Fire Assay	Soil: 300-g jar	None	6 months

* Samples for Total Metals, Total Mercury, and Precious Metals will be collected in the same container and split for analysis by the laboratory.

TABLE 2: ESTIMATED FIELD QUALITY CONTROL SAMPLE SUMMARY

QC SAMPLE	FREQUENCY	PROJECTED QUANTITY	ANALYSES
Field Duplicate	One per 10 environmental samples	Three (2 solid and 1 liquid)	<u>Solids</u> Total Metals + Mercury TCLP Metals Precious Metals Fire Assay <u>Liquids</u> TCLP Metals
Field Blank	One per day	One	Total Metals + Mercury TCLP Metals Precious Metals
Equipment Blank	One per trip	One	Total Metals + Mercury TCLP Metals Precious Metals
Total QC Samples	Two solid and one water duplicate, one field blank, and one equipment blank		

List of Information Requested During the Inspection

Listed below are the specific questions generated from your May 6, 1997 comments. Please review them and make any necessary modifications. If there are no additional questions, please indicate your agreement by initially and dating the bottom of each page.

1. Provide the average assay of all the materials identified on the April inventory check list.
2. Provide a copy of the March inventory check list.
3. Provide a listing of the materials on the April 1997 inventory check list in which Asarco is paid to process.
4. Provide shipment dates, quantity of material received, and quantity of the material processed for the Encycle materials identified in Piles 213, 320, and 697.
5. Provide shipment dates, quantity of the material received, and quantity of the material processed for the Missouri material identified in Pile 265.
6. Provide shipment dates, quantity of material received, and quantity of the material processed for the Omaha materials identified in Piles 347, 409, and 487.
7. Provide information on the Idaho material identified as being shipped by Neway Transportation.
8. Provide a copy of the Amarillo precious metal brick manifest.
9. Provide a copy of the hazardous waste manifests for Omaha brick that was being shipped off-site. *OK*
10. Provide a copy of the hazardous waste manifests for East Helena brick that was shipped off-site. *OK*
11. Provide a copy of the waste profile sheet for ^{ALL} the brick shipments *offsite for disposal. OK*
12. Provide a copy of the waste manifest for the spent solvents shipments.
13. Identify the material in Pile 436.

Initials: *Amg*

Date: *5/7/97*

14. Provide the quantity of Trafiguria Beheer material smelted in 1996 that are highlighted on the previous 3007 response.
15. Provide the quantity of Golden Reward Mining cupels smelted in 1996 that are highlighted on the previous 3007 response.
16. Provide the quantity of the two Encycle materials smelted in 1996 that are highlighted on the previous 3007 response.
17. Provide the fire assaying procedures used at the East Helena Plant.
18. Provide the material sampling procedures used in the East Helena Plant.
19. Provide a description of how the Sauget material (Pile 612) is generated.
20. Provide a description of how the Amax material (Piles 773 and 776) are generated.
21. Provide the date^{or dates} of generation for the East Helena brickpiles.
22. Provide date of generation of foul Speiss. Provide the Volume + Assay.
23. Cost of Transportation of Amarillo brick-
24. Provide a copy of the May 22, 1996 summary of a meeting between Mr. Novotne + the Union posted in Hallway outside J.R. Shaw's office.

Initials: Aaz

Date: 5/7/97